AMENDMENTS FOR TREATMENT OF AGRICULTURAL WASTE

(Animal Units)
Code 591

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

Treatment of manure, process wastewater, storm water runoff from lots or other high intensity areas, and other wastes, with chemical or biological additives.

II. Purpose

To alter the physical and/or chemical characteristics of the waste stream to facilitate the implementation of an agricultural waste management system to:

- improve or protect air quality.
- improve or protect water quality.
- improve or protect animal health.
- meet management objectives.

III. Conditions Where Practice Applies

This practice applies where the use of a chemical or biological amendment will alter the physical and chemical characteristics of the waste stream as a part of a planned waste management system. This practice does not include amendments added to the animal feed.

IV. Federal, State, and Local Laws

Users of this standard should be aware of potentially applicable federal, state and local laws, rules, regulations or permit requirements governing amendments for treatment of agricultural waste. This standard does not contain the text of federal, state, or local laws.

V. Criteria

The following criteria establishes minimum allowable limits for design parameters, acceptable installation processes, or performance requirements applicable to all purposes.

A. Management Assessment

A management assessment shall be conducted, documented, and incorporated into the design. The assessment shall be performed with the owner/operator to explore options for amendments to the waste stream, available resources, and waste characteristics.

The designer shall provide a narrative describing the agricultural waste management system and the anticipated outcomes of amendment use. The narrative shall also include the strategy for utilization, storage, or land spreading of the wastes following amendment use.

B. Labeling and Instructions for Use

Products to be used as manure amendments shall be labeled or accompanied by instructions containing the following information as a minimum:

- Active ingredients and their percentage of the whole. Proprietary terminology may be used as long as the actual chemical and/or biological names are included.
- The purpose(s) for which the amendment is intended.
- Recommended application rate(s) to achieve the intended purpose(s).
- Application timing and methodology to optimize the effectiveness of the amendment.
- Incorporation requirements (if any).
- Special handling and storage requirements for the amendment.
- Any safety concerns relating to the use of the amendment and recommended measures to overcome the safety concern, including any required personal protective equipment.

C. Validation of Product

The species-specific rate, timing and application methodology of an amendment to achieve a needed level of treatment addressing a specific purpose must be documented by a university or other independent research entity acceptable to the NRCS. Documentation from peer reviewed journals is preferable. The effectiveness of the amendment under different climatic factors shall be included in the documentation, or if there are

no difference in effectiveness, the documentation shall so state. Potential adverse impacts of the amendment on the ecosystem shall also be identified in the documentation. It shall be the responsibility of the amendment provider to furnish the documentation to the NRCS.

D. Storage and Transfer of Treated Wastes

Waste stream flow to or from a facility used in the amendment treatment process shall meet the requirements of Wisconsin NRCS Field Office Technical Guide (FOTG) Section IV, Standard 634, Manure Transfer.

Adequate storage shall be provided for manure or manure derivates following amendment treatment unless they are transported directly to the final utilization location. Storage facilities shall be designed in accordance with NRCS FOTG Section IV, Standard 313, Waste Storage Facility.

E. Plans and Specifications

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended purpose(s). Specifications for the use of an individual amendment will be developed in accordance with the label directions and other instructions provided by the vendor. As a minimum, the plans and specifications shall provide the following:

- The name of the amendment, the purpose(s) for its use, and the planned outcome(s).
- Application methodology, including rates, timing, mixing instructions, temperature requirements, etc.
- Required tests to determine the effectiveness of the amendment as appropriate.

F. Operation and Maintenance

A site-specific operation and maintenance (O&M) plan shall be developed and reviewed with the operator and owner prior to implementation of the practice. The O&M plan shall be consistent with the purposes of the practice, safety considerations, and label directions and other instructions provided by the vendor.

The O&M plan shall provide sufficient detail as to amendments to be used, application rates and timing, and equipment to be used.

The O&M plan shall detail all safety precautions necessary when handling the specific chemicals or biological amendments to be used.

The O&M plan shall provide for record keeping in sufficient detail to describe the amendment's use, actual application rates and timing, and any tests performed (including nutrient analysis).

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. The use of an amendment may alter the composition of the waste stream. The use of amendments should be limited to situations where impacts of the altered waste stream on other aspects of the planned system have been identified.

B. Some amendments have been shown to affect multiple purposes of this standard and other aspects of a livestock production operation. Preference should be given to amendments with the greatest environmental and economic benefit.

C. The use of amendments to reduce ammonia and other emissions from manure in confined spaces may allow altered ventilation strategies at an appreciable energy savings. The reduction of ammonia emissions will also increase the proportion of nitrogen in the manure.

VII. References

USDA, NRCS Wisconsin Field Office Technical Guide (FOTG), Section IV, Practice Standards and Specifications.

USDA, NRCS National Engineering Handbook, Part 651, Agricultural Waste Management Field Handbook.